

CLAIMS

1. A recycling apparatus, comprising:

a first frame;

a first disc screen section including a plurality of laterally extending first shafts rotatably mounted in the first frame and spaced along a longitudinal conveying direction, first drive means for rotating the first shafts, and a plurality of first discs mounted on the first shafts, the first discs being dimensioned, configured and spaced for classifying a stream of mixed recyclable materials deposited onto the first discs as the first discs are rotated by the first drive means to convey a first portion of the stream along the conveying direction to an output end of the first disc screen section;

a second frame positioned adjacent to the first frame;

a second disc screen section having an input end immediately adjacent to the output end of the first disc screen section and including a plurality of laterally extending second shafts rotatably mounted in the second frame and spaced along the longitudinal conveying direction, second drive means for rotating the second shafts, and a plurality of second discs mounted on the second shafts, the second discs being dimensioned, configured and spaced for classifying the first portion of the stream of mixed recyclable materials deposited onto the second discs from the first disc screen section as the second discs are rotated by the second drive means to convey a second portion of the stream along the conveying direction; and

means for selectively adjusting a second angle of inclination of the second disc screen section relative to the first disc screen section without changing a first angle of inclination of the first disc screen section.

2. The recycling apparatus of Claim 1 and further comprising means for pivotally connecting the second frame to the first frame.

3. The recycling apparatus of Claim 1 wherein the means for selectively adjusting the second angle of inclination of the second disc screen section includes a hydraulic cylinder.

4. The recycling apparatus of Claim 1 wherein the first frame and the second frame have complementary mating surfaces that limit a range of articulation of the second frame relative to the first frame.

5. The recycling apparatus of Claim 1 wherein the first frame further includes a third disc screen section including a plurality of laterally extending third shafts rotatably mounted in the third frame and spaced along the longitudinal conveying direction, third drive means for rotating the third shafts, and a plurality of third discs mounted on the third shafts, the third discs being dimensioned, configured and spaced for classifying a third portion of the stream of mixed recyclable materials deposited onto the third discs from the first disc screen section as the third discs are rotated by the third drive means to convey a fourth portion of the stream along the conveying direction

6. The recycling apparatus of Claim 1 and further comprising a stand for supporting the first and second frames.

7. The recycling apparatus of Claim 1 wherein the frames are each enclosures.

8. The recycling apparatus of Claim 1 wherein the first and second disc screen sections are positioned end-to-end to form a single continuous classifying deck.

9. The recycling apparatus of Claim 1 wherein the first and second drive means share a common motor and drive linkage.

10. The recycling apparatus of Claim 2 wherein the means for pivotally connecting the second frame to the first frame includes an uppermost one of the first shafts.

11. A recycling apparatus, comprising:
a single continuous disc screen having first and second sections positioned end-to-end and including a plurality of laterally extending shafts, a plurality of discs mounted on the shafts and having

an irregular outer contour, means for rotating the shafts in a common direction so that the discs will classify mixed recyclable materials deposited onto the discs and convey a portion of the materials along a conveying direction, and means for adjusting an angle of inclination of the second section relative to the first section.

12. The recycling apparatus of Claim 1 wherein the apparatus further includes a first frame for rotatably supporting a first portion of the shafts and a second frame for rotatably supporting a second portion of the shafts, and means for mounting the second frame for pivotal rotation relative to the first frame.

13. The recycling apparatus of Claim 12 wherein the mounting means includes a shaft of the first section.

14. The recycling apparatus of Claim 11 wherein the means for adjusting the angle of inclination includes a hydraulic cylinder.

15. The recycling apparatus of Claim 12 and further comprising a stand that supports the first and second frames.

16. The recycling apparatus of Claim 11 wherein the first and second sections have a generally planar configuration.

17. The recycling apparatus of Claim 16 wherein the second section has more shafts than the first section.

18. The recycling apparatus of Claim 11 wherein the second section can be pivoted so that the first and second sections form a single planar disc screen.

19. The recycling apparatus of Claim 11 wherein the shafts of the first section are rotated
by a first drive means and the shafts of the second section are rotated by a separate second drive
means.

20. A method of classifying mixed recyclable materials containing paper and containers,
comprising the steps of:

providing a single continuous inclined disc screen having a plurality of discs with irregular
outer contours supported on parallel shafts spaced along a conveying direction;

rotating the shafts in a common direction;

depositing the mixed recyclable materials onto the rotating discs; and

adjusting an angle of inclination of a downstream section of the disc screen relative to an
upstream section of the disc screen to ensure that mostly containers fall off an input end of the disc
screen and mostly paper falls off an output end of the disc screen.